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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR         | ATTORNEY DOCKET NO.               | CONFIRMATION NO.       |
|--|-------------|------------------------------|-----------------------------------|------------------------|
| 10/575,692   | 01/24/2007  | Vladimir Mikhailovich Linkov | U 016257-7                        | 3601                   |
| 140  | 7590        | 01/14/2008                   |                                   |                        |
| LADAS & PARRY<br>26 WEST 61ST STREET<br>NEW YORK, NY 10023 |             |                              | EXAMINER<br>WITHERSPOON, SIKARL A |                        |
|  |             |                              | ART UNIT<br>1621                  | PAPER NUMBER           |
|  |             |                              | MAIL DATE<br>01/14/2008           | DELIVERY MODE<br>PAPER |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |  |                                      |  |
|------------------------------|--|--------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/575,692     | <b>Applicant(s)</b><br>LINKOV ET AL. |  |
|                              | <b>Examiner</b><br>Sikarl A. Witherspoon | <b>Art Unit</b><br>1621              |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 13 February 2007.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 and 8-20 is/are rejected.
- 7) ☒ Claim(s) 7 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>1/24/07</u> . | 6) <input type="checkbox"/> Other: _____  |

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 19 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Tsymbal et al (HCAPLUS doc.# 107: 205930).

The reference discloses a hexachloro-platinate complex supported on gamma-alumina. This complex anticipates the instant claims.

Claims 19 and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Siddik et al (HCAPLUS doc. # 122: 230144).

The tetravalent platinum complex disclosed by the reference anticipates the instant claims.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claim 21 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tsymbal et al and/or Siddik et al.

The instant claim describes the form and porosity of the catalyst support. The abstracts of the references do not expressly mention the form of porosity of the support materials; however, the examiner contends that such a limitation would have been obvious to a person having ordinary skill in the art since such a person would have selected a support having a shape, i.e., form, and porosity that would allow the gas-phase process to occur with desirable results.

Claims 1-6 and 8-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deutschmann et al (Catalysis Today, 1998) in view of Keinan et al (US 6,500,957).

The claims are drawn to a process for the catalytic conversion of a lower alkane to an aldehyde and/or alcohol by bringing the lower alkane into contact with an oxidizing agent in the in the presence of a catalyst comprising at least one platinum complex.

Deutschmann et al teach the catalytic conversion of methane to formaldehyde and methanol (abstract, p 158 and 159) using a platinum foil as catalyst.

Deutschmann et al do not teach the use of a platinum complex for said process; however, Keinan et al teach platinum complexes comprising platinum (IV), said complex being employed in processes wherein C-C and/or C-H bonds of a hydrocarbon are activated (abstract; col. 4, lines 56-64). An exemplary reaction is the catalytic reaction of methane to produce methanol (col. 5, lines 8-19).

It therefore would have been obvious to a person having ordinary skill in the art that hydrocarbon conversion process for lower alkane conversion can be accomplished using platinum as catalytically active metal, either in the form of a foil, or if process conditions find it more desirable, as a stable organometallic complex, with the reasonable expectation that both types of catalyst will catalyze the conversion of a lower alkane to the corresponding oxygenate.

Claim 7 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sikarl A. Witherspoon whose telephone number is 571-272-0649. The examiner can normally be reached on M-F 8:30-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Yvonne Eyler can be reached on 571-272-0871. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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SIKARL A. WITHERSPOON  
PRIMARY EXAMINER